

# **Pedestrian Safety Initiative Update**

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Initiative Meeting #9  
14 May 2012

# CountyStat Principles

- **Require Data Driven Performance**
- **Promote Strategic Governance**
- **Increase Government Transparency**
- **Foster a Culture of Accountability**



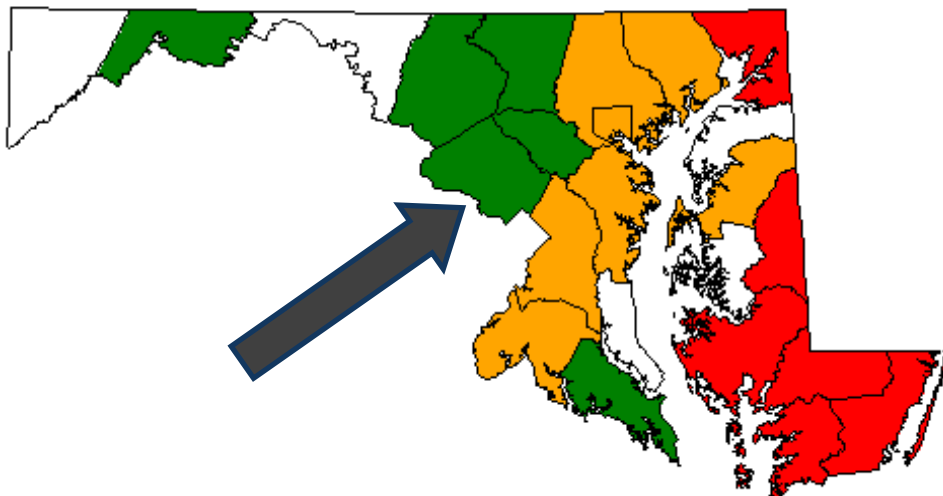
# Agenda

- **Introductions**
- **Comparison of Regional Pedestrian Collision Data**
  - Pedestrian Fatalities Indicator
  - Pedestrian Collisions
- **Trends in Police Traffic Collision Data**
- **High Incidence Area Strategy Update**
  - Highlighted Improvements to Each High Incident Area
- **Safe Routes to School Strategy Update**
- **Traffic Calming Strategy Update**
- **Sidewalk and Bus Stop Improvement**
- **Other Programmatic Highlights**

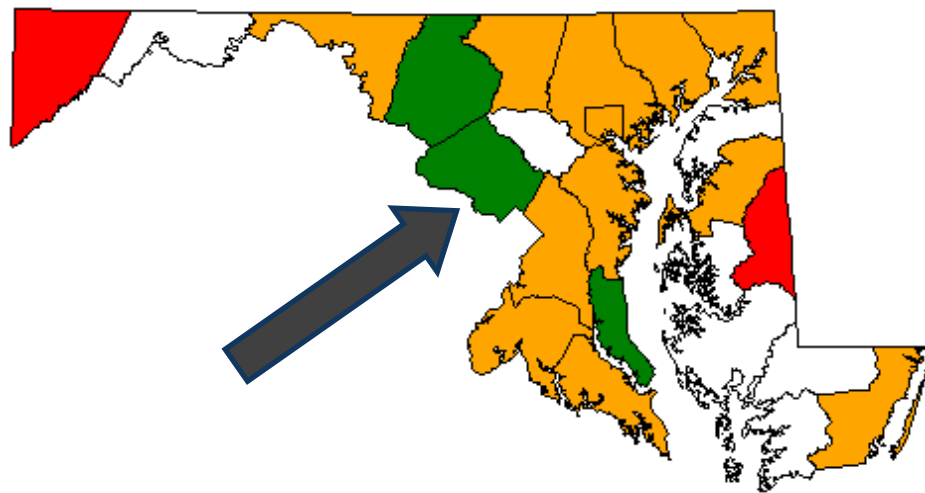


# Pedestrian Fatalities – National Rate Comparison

**2009 Pedestrian Fatalities per 100,000  
(National Comparison)**



**2010 Pedestrian Fatalities per 100,000  
(National Comparison)**



Compare Individual County Rate to the Rates of all US Counties



Compare Individual County Rate to the Rates of all US Counties

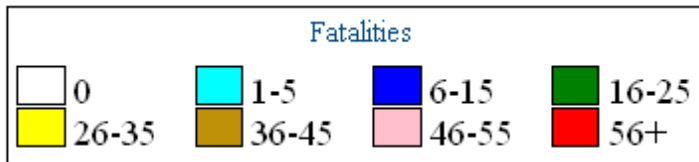
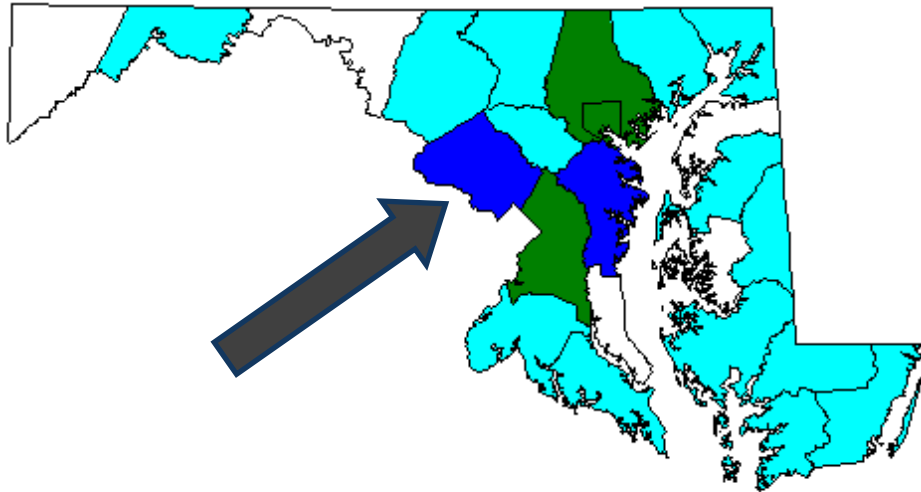


Source: National Highway Traffic Safety Administration: Fatality Analysis Reporting System

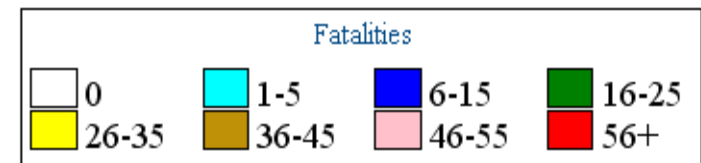
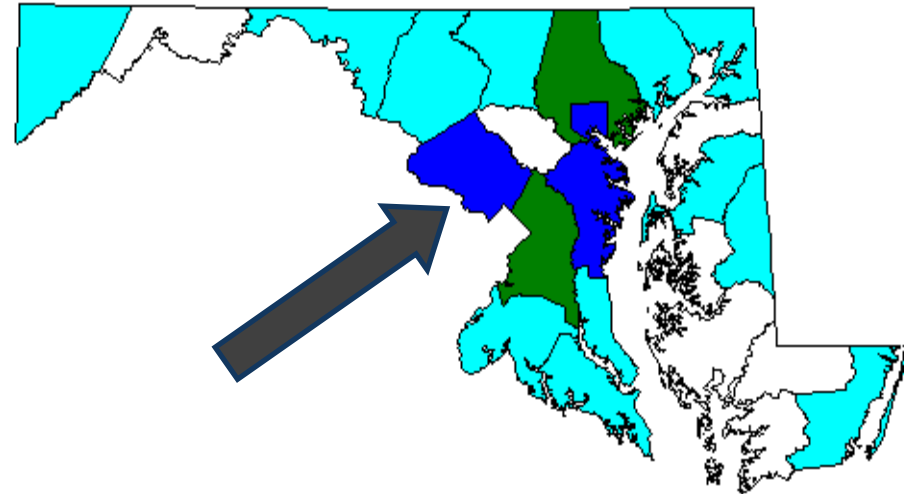
Data may vary from local jurisdiction's reported figures

# Pedestrian Fatalities - Maryland Comparison

## 2009 Pedestrian Fatalities



## 2010 Pedestrian Fatalities



Source: National Highway Traffic Safety Administration: Fatality Analysis Reporting System

Data may vary from local jurisdiction's reported figures



# Regional Comparison of Pedestrian and Bicyclist Fatalities



| Jurisdiction           | 2006      | 2007       | 2008      | 2009      | 2010      | Total      |
|------------------------|-----------|------------|-----------|-----------|-----------|------------|
| District of Columbia   | 17        | 27         | 15        | 16        | 16        | 91         |
| Charles County         | 2         | 6          | 1         | 3         | 3         | 15         |
| Frederick County       | 4         | 1          | 0         | 1         | 4         | 10         |
| Montgomery County      | 18        | 18         | 19        | 15        | 14        | 84         |
| Prince George's County | 20        | 29         | 41        | 23        | 23        | 136        |
| Arlington County       | 1         | 1          | 1         | 4         | 1         | 8          |
| City of Alexandria     | 1         | 2          | 0         | 0         | 2         | 5          |
| Fairfax County         | 20        | 17         | 4         | 11        | 13        | 65         |
| City of Fairfax        | 0         | 1          | 0         | 2         | 0         | 3          |
| City of Falls Church   | 0         | 0          | 0         | 0         | 2         | 2          |
| Loudoun County         | 1         | 3          | 0         | 1         | 2         | 7          |
| City of Manassas       | 0         | 1          | 0         | 0         | 0         | 1          |
| City of Manassas Park  | 0         | 0          | 0         | 0         | 0         | 0          |
| Prince William County  | 7         | 5          | 6         | 6         | 6         | 30         |
| <b>Total</b>           | <b>91</b> | <b>111</b> | <b>87</b> | <b>82</b> | <b>86</b> | <b>457</b> |

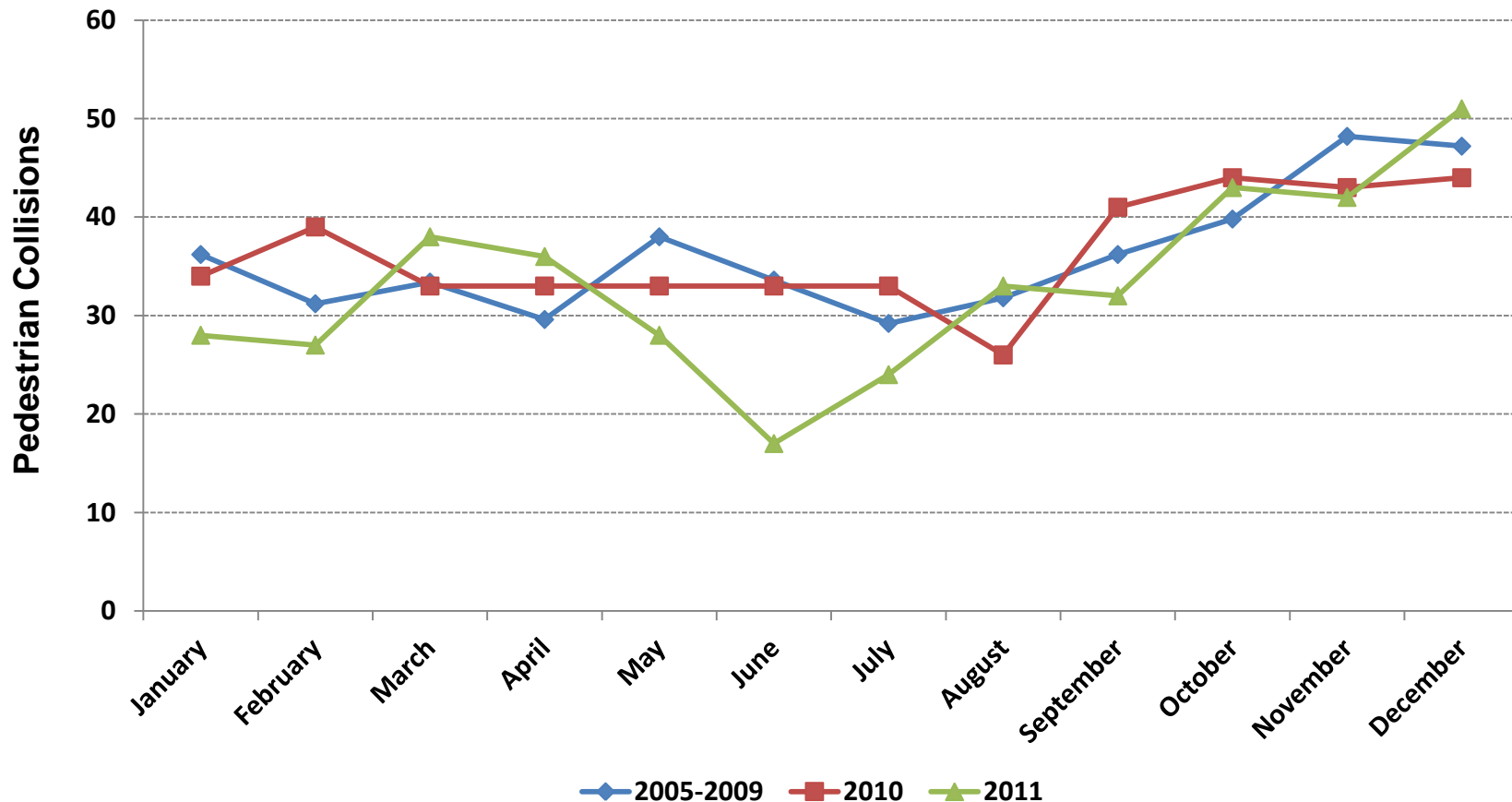


# Montgomery County Pedestrian Collisions and Fatalities

|   | 2005       | 2006       | 2007       | 2008       | 2009       | 2010       | 2011       |
|---|------------|------------|------------|------------|------------|------------|------------|
| January   | 36         | 31         | 32         | 48         | 34         | 34         | 28         |
| February  | 28         | 28         | 33         | 30         | 37         | 39         | 27         |
| March   | 37         | 28         | 34         | 37         | 31         | 33         | 38         |
| April   | 26         | 25         | 35         | 34         | 28         | 33         | 36         |
| May   | 27         | 36         | 34         | 47         | 46         | 33         | 28         |
| June  | 41         | 33         | 29         | 24         | 41         | 33         | 17         |
| July  | 24         | 29         | 20         | 37         | 36         | 33         | 24         |
| August  | 28         | 37         | 26         | 36         | 32         | 26         | 33         |
| September                                       | 39         | 39         | 38         | 35         | 30         | 41         | 32         |
| October   | 48         | 42         | 37         | 31         | 41         | 44         | 43         |
| November  | 48         | 49         | 60         | 38         | 46         | 43         | 42         |
| December  | 52         | 52         | 34         | 47         | 51         | 44         | 51         |
| <b>Total Collisions</b>                         | <b>434</b> | <b>429</b> | <b>412</b> | <b>444</b> | <b>453</b> | <b>436</b> | <b>399</b> |
| <b>Per 100,000</b>                              | 46.7       | 45.9       | 43.8       | 46.6       | 46.8       | 44.9       | 40.5       |
| <b>% Level 4 &amp; 5<br/>(serious injuries)</b> | 30.0%      | 32.6%      | 29.4%      | 25.5%      | 28.8%      | 25.8%      | 25.6%      |
| <b>Total Fatalities</b>                         | <b>10</b>  | <b>18</b>  | <b>17</b>  | <b>19</b>  | <b>14</b>  | <b>13</b>  | <b>11</b>  |
| <b>Per 100,000</b>                              | 1.1        | 1.9        | 1.8        | 2.0        | 1.4        | 1.3        | 1.1        |



# Montgomery County Pedestrian Collisions



**Pedestrian collision data demonstrates similar trends in the fall months in 2010 and 2011 in comparison to the 2005-2009 average**



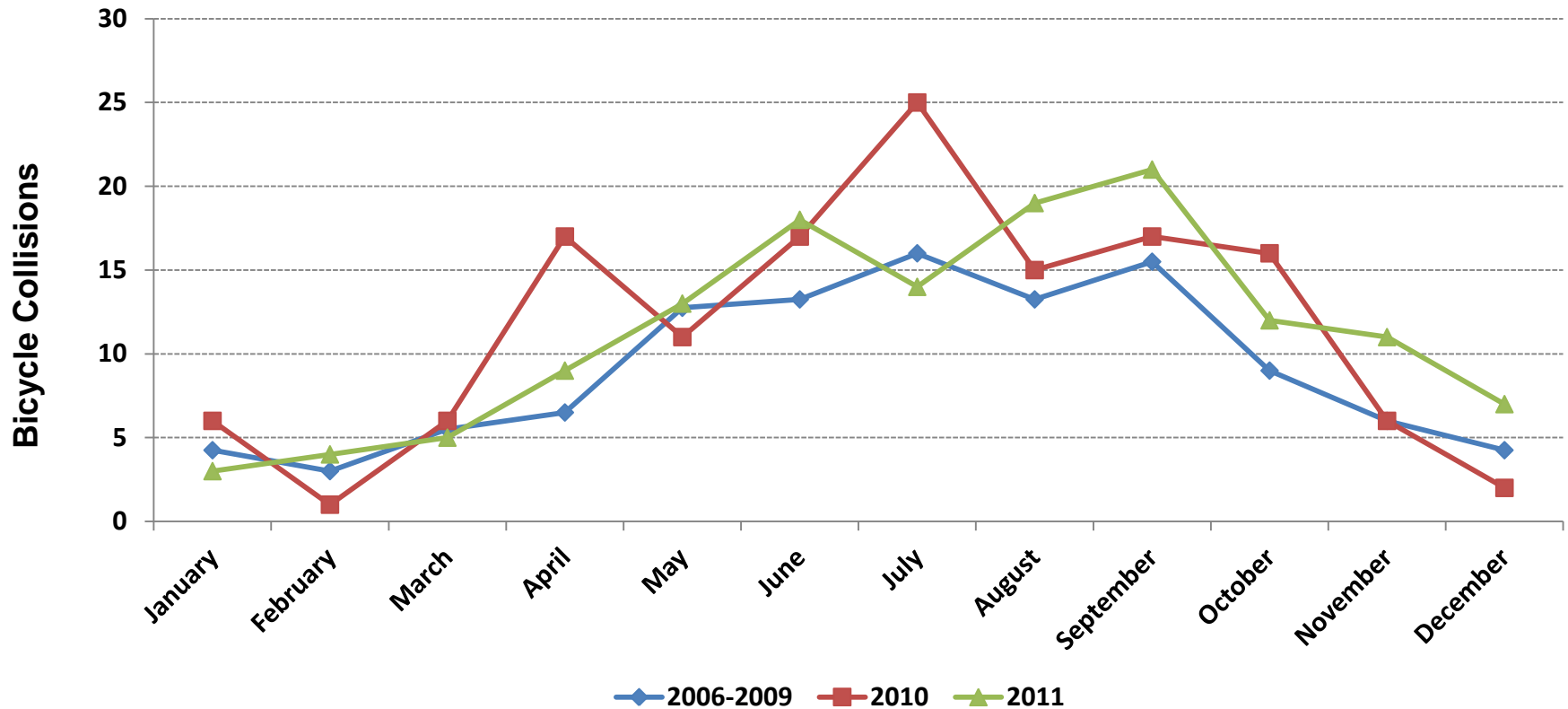


# Montgomery County Bicycle Collisions and Fatalities

|                         | 2006       | 2007       | 2008      | 2009       | 2010       | 2011       |
|-------------------------|------------|------------|-----------|------------|------------|------------|
| January                 | 6          | 1          | 5         | 5          | 6          | 3          |
| February                | 6          | 0          | 5         | 1          | 1          | 4          |
| March                   | 11         | 6          | 2         | 3          | 6          | 5          |
| April                   | 8          | 6          | 2         | 10         | 17         | 9          |
| May                     | 13         | 15         | 8         | 15         | 11         | 13         |
| June                    | 15         | 13         | 10        | 15         | 17         | 18         |
| July                    | 13         | 21         | 18        | 12         | 25         | 14         |
| August                  | 14         | 13         | 15        | 11         | 15         | 19         |
| September               | 15         | 20         | 8         | 19         | 17         | 21         |
| October                 | 7          | 9          | 11        | 9          | 16         | 12         |
| November                | 9          | 7          | 5         | 3          | 6          | 11         |
| December                | 3          | 6          | 6         | 2          | 2          | 7          |
| <b>Total Collisions</b> | <b>120</b> | <b>117</b> | <b>95</b> | <b>105</b> | <b>139</b> | <b>136</b> |
| <b>Total Fatalities</b> | <b>0</b>   | <b>1</b>   | <b>0</b>  | <b>1</b>   | <b>1</b>   | <b>0</b>   |



# Montgomery County Bicycle Collisions

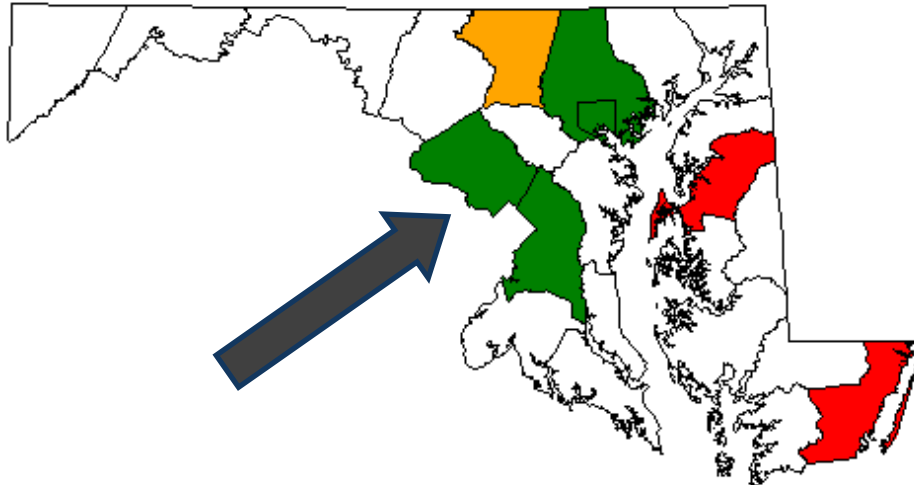


|   | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|------|------|------|------|------|------|
| <b>Ped Crashes</b>                        | 429  | 412  | 444  | 454  | 436  | 399  |
| <b>Bicycle Crashes</b>                    | 120  | 117  | 95   | 105  | 139  | 136  |
| <b>Bicycle as % of all Ped &amp; Bike</b> | 22%  | 22%  | 18%  | 19%  | 24%  | 25%  |



# 2010 Pedalcyclist Fatalities - Maryland Comparison

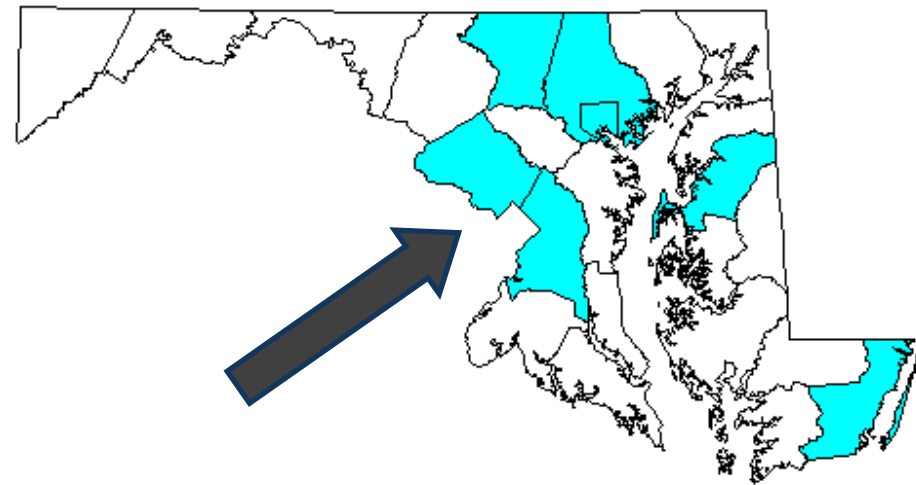
## Pedalcyclist Fatalities per 100,000 (National Comparison)



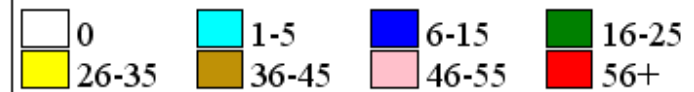
Compare Individual County Rate to the Rates of all US Counties



## Pedalcyclist Fatalities (National Comparison)



Fatalities



Source: National Highway Traffic Safety Administration: Fatality Analysis Reporting System

Data may vary from local jurisdiction's reported figures



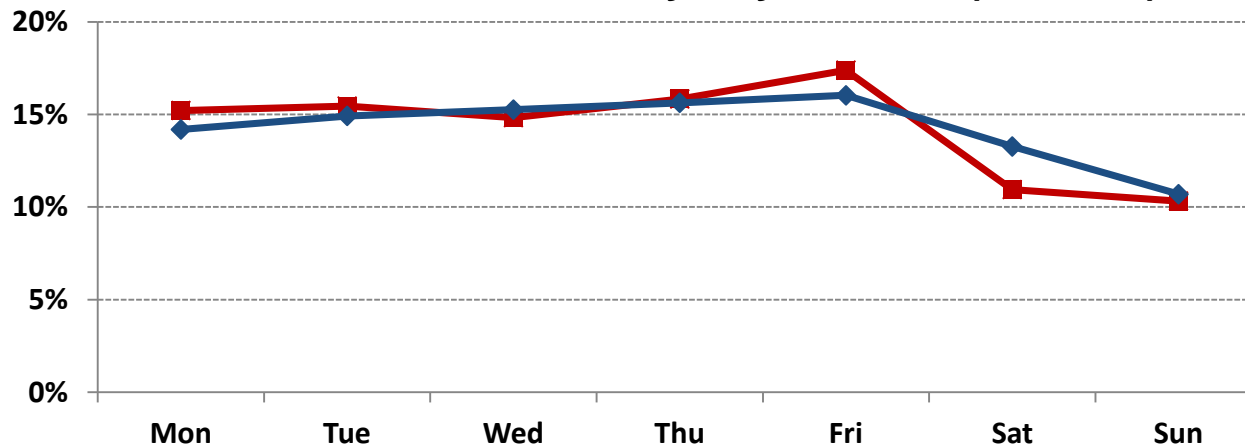
# Traffic Data Collection and Performance Reporting: Constraints of Current Practice

- Currently the Police Traffic Division relies on a legacy Microsoft Access database (created in 2000) to store collision data and generate analysis
  - This database is tactical in nature and does not provide a comprehensive listing of all incidents
  - All entries are currently made manually
  - Reliability of the legacy data is questionable due to inconsistent data management practices from 2007-2009
- The lack of geo-coded data limits the ability of the County to conduct geospatial analysis
  - Currently accident data is coded by intersection or lane mile, which require laborious manual validation of the address to ensure accuracy
  - A new forthcoming State of Maryland system should include geospatial coordinates stamped by the officer's laptop GPS unit
  - This feature will require the officer to record the incident correctly in the field but will have a significant impact on reducing the burden on post-incident analysis.



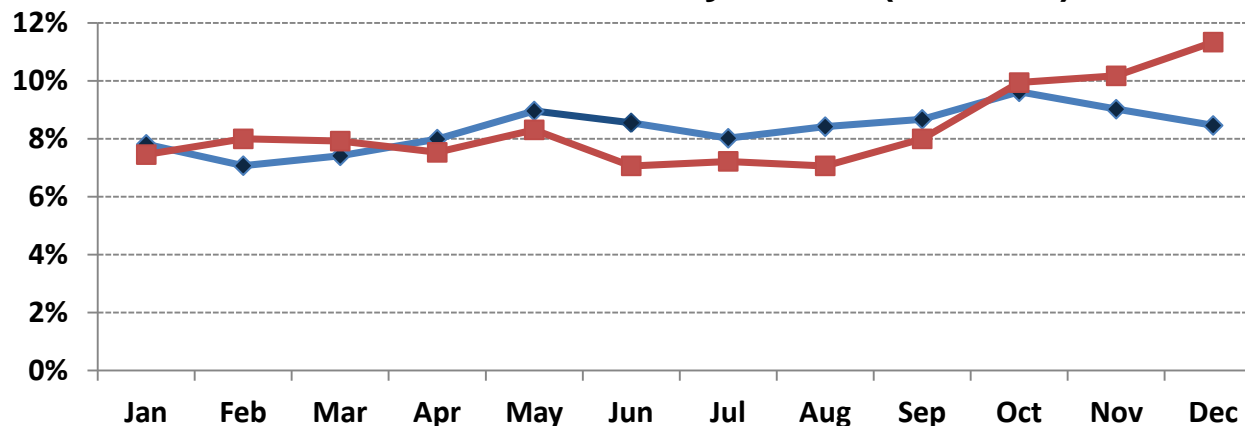
# Trends in Pedestrian Accidents: Time Variables

## Percent of Accidents by Day of Week (CY09-11)



All types of accidents decline during the weekend days after a peak on Friday.

## Percent of Accidents by Month (CY09-11)



The largest disparity between pedestrian and non-pedestrian accidents occurs during the early winter months.



% of Total Non-Pedestrian

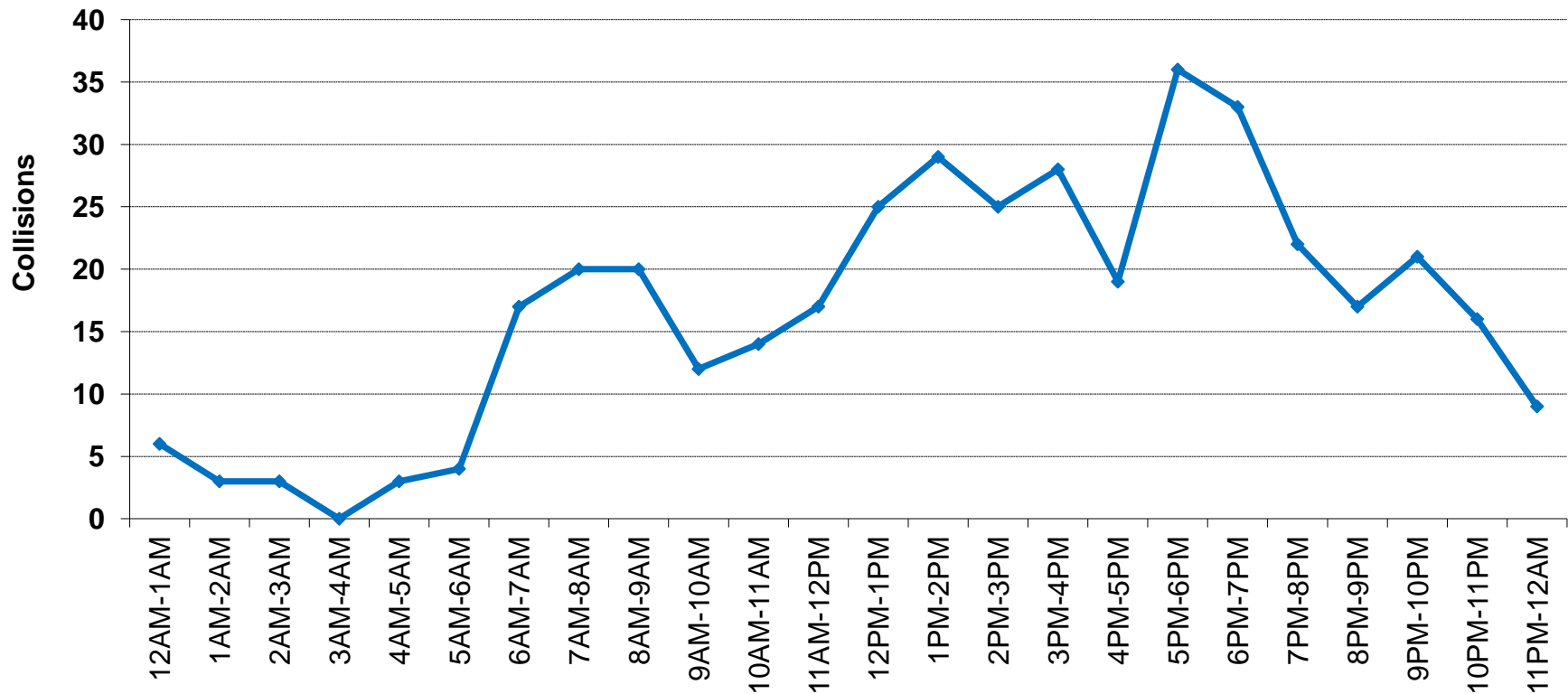


% of Total Pedestrian



# Trends in Pedestrian Accidents: Time Variables

## 2011 Pedestrian Collisions by Time of Day

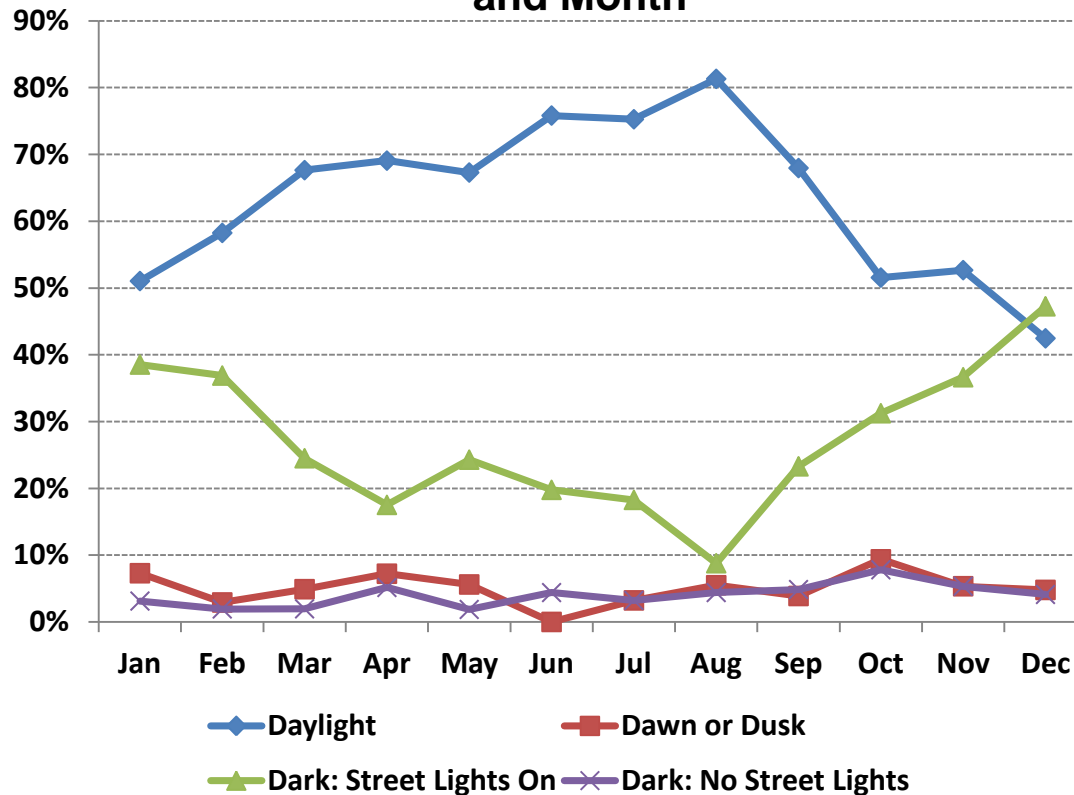


In 2011, pedestrian collisions peaked during the late afternoon and early evening rush hours.

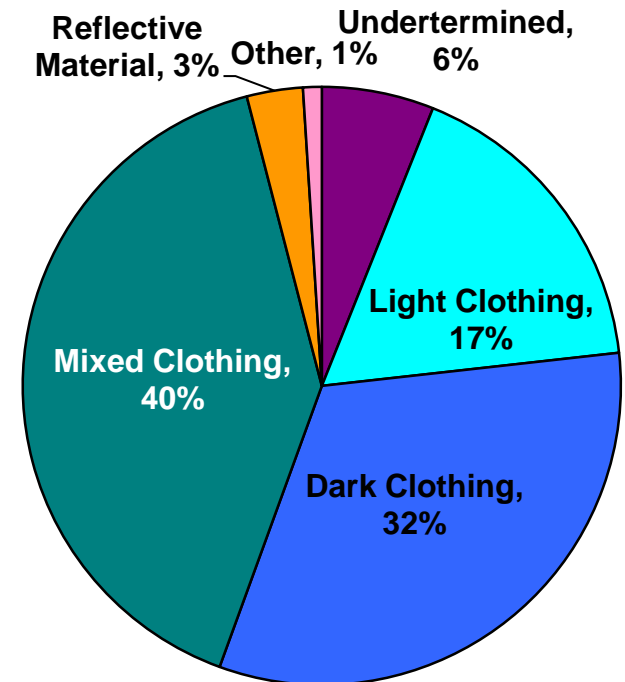


# Trends in Pedestrian Accidents: Comparison of Time of Visibility Variables

## 2009-2011 Collisions by Lighting and Month



## 2011 Pedestrian Collisions by Clothing Visibility



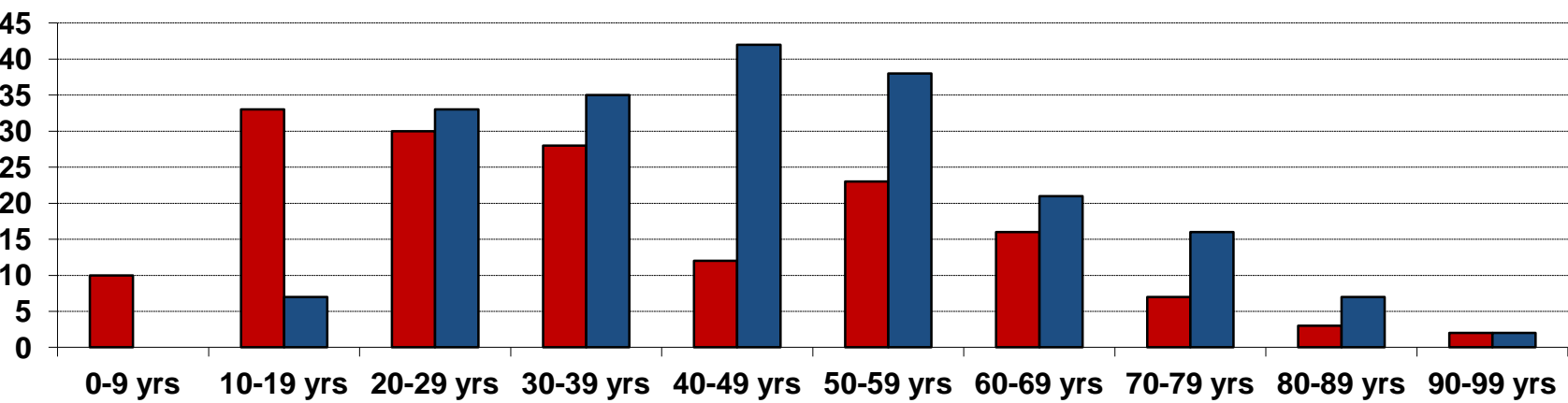
**Trends from 2009 to 2011 demonstrate little seasonal deviation in dawn/dusk and no street light collisions**



# Trends in Pedestrian Accidents: Pedestrian Collisions by Fault

| At Fault Units | 2007   | 2008   | 2009   | 2010   | 2011   |
|----------------|--------|--------|--------|--------|--------|
| Driver         | 171    | 182    | 207    | 214    | 225    |
| %              | 41.50% | 41.00% | 45.40% | 49.10% | 56.50% |
| Pedestrian     | 157    | 194    | 190    | 186    | 158    |
| %              | 38.10% | 43.70% | 41.70% | 42.70% | 39.70% |
| Both           | 27     | 8      | 5      | 15     | 13     |
| %              | 6.60%  | 1.80%  | 1.10%  | 3.40%  | 3.30%  |
| Not Determined | 57     | 60     | 53     | 21     | 3      |
| %              | 13.80% | 13.50% | 11.80% | 4.80%  | 0.50%  |
| Total          | 412    | 444    | 455    | 436    | 399    |

Age Breakdown of At Fault Units





# Collisions in High Incidence Areas

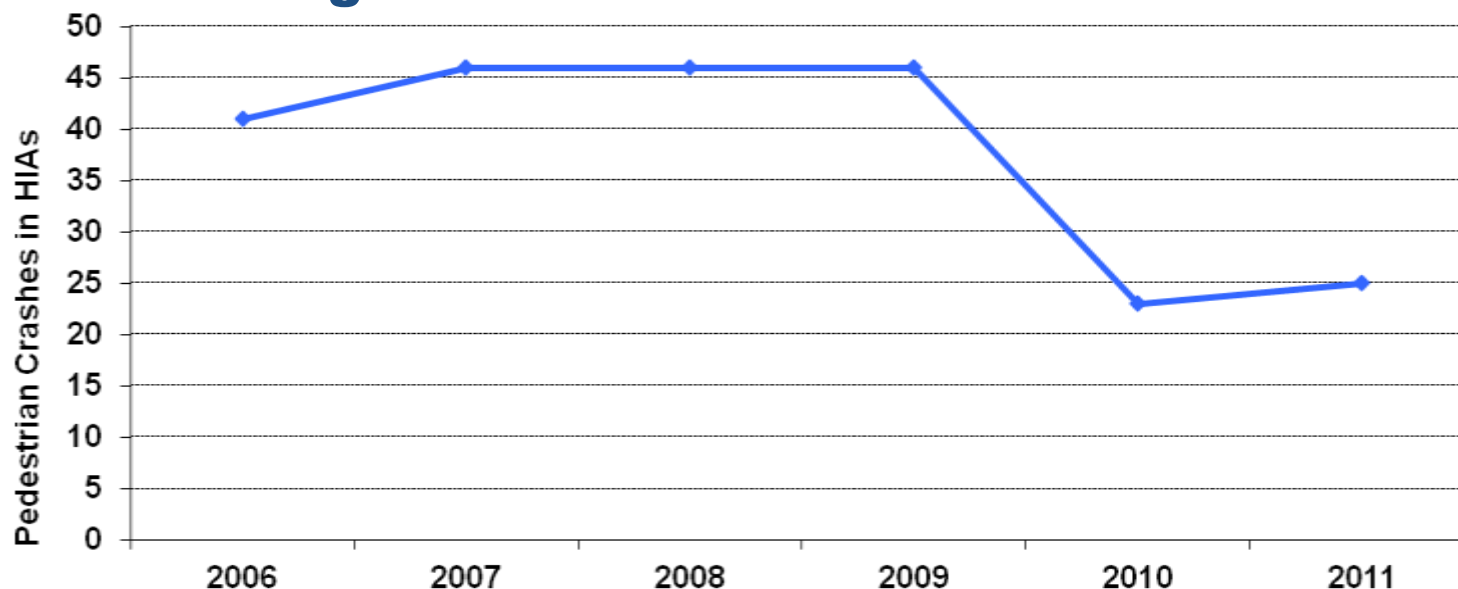
Year of PRSA Audit

| High Incidence Area | Date of PRSA Audit | Number of Pedestrian Collisions |      |      |      |      |      |       |
|---------------------|--------------------|---------------------------------|------|------|------|------|------|-------|
|                     |                    | 2006                            | 2007 | 2008 | 2009 | 2010 | 2011 | TOTAL |
| Piney Branch Road   | Oct 2008           | 10                              | 8    | 7    | 8    | 3    | 5    | 41    |
| Wisconsin Ave       | Dec 2008           | 6                               | 10   | 3    | 4    | 3    | 3    | 29    |
| Georgia Ave         | Mar 2009           | 7                               | 5    | 7    | 10   | 4    | 4    | 37    |
| Rockville Pike      | Jun 2009           | 4                               | 3    | 9    | 8    | 2    | 3    | 29    |
| Four Corners        | Jan 2010           | 4                               | 7    | 5    | 0    | 1    | 3    | 20    |
| Reedie Drive        | Apr 2010           | 0                               | 3    | 3    | 7    | 2    | 1    | 16    |
| Randolph Road       | Sep 2010           | 2                               | 1    | 4    | 4    | 1    | 2    | 14    |
| Connecticut Ave     | May 2011           | 4                               | 5    | 6    | 2    | 2    | 3    | 22    |
| Colesville Road     | Nov 2011           | 4                               | 4    | 2    | 3    | 5    | 2    | 20    |
| Total               |                    | 41                              | 46   | 46   | 46   | 23   | 26   |       |

Over the past two years, the reduction in pedestrian crashes has remained lower for HIAs studied in earlier years (2008 & 2009).



## Collisions in High Incidence Areas: Annual Trend

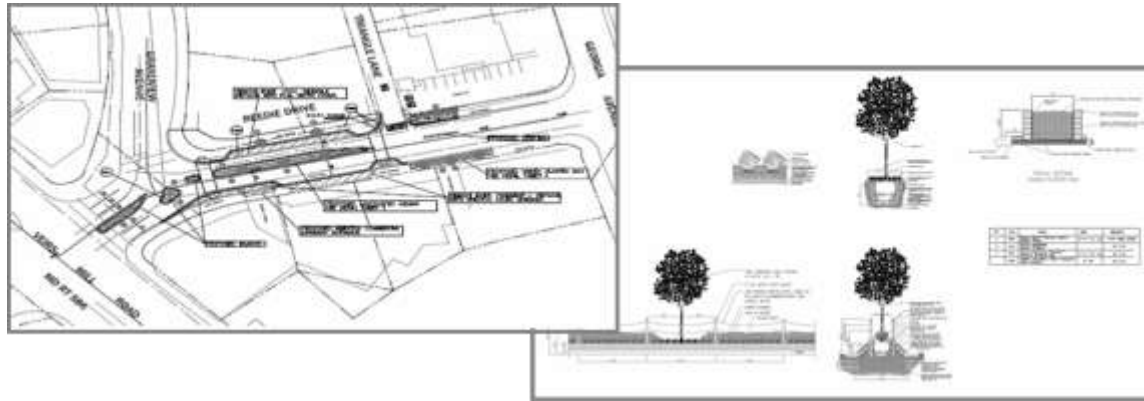


|                   | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|-------------------|------|------|------|------|------|------|
| HIA               | 41   | 46   | 46   | 46   | 23   | 26   |
| Countywide        | 429  | 412  | 444  | 454  | 436  | 399  |
| HIA as % of Total | 10%  | 11%  | 10%  | 10%  | 5%   | 7%   |

**In 2010 and 2011 the HIA collisions as a percentage of total pedestrian collisions has seen a notable decrease.**



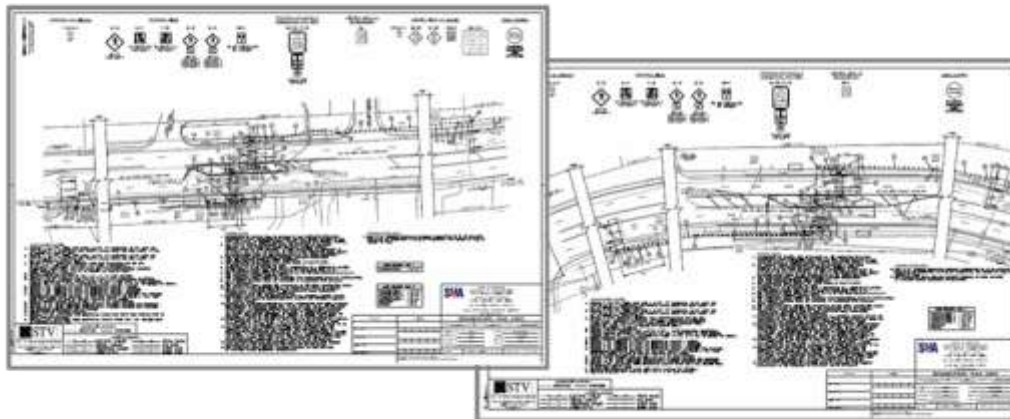
# High Incidence Areas: Project Updates



**Reddie Drive Streetscape Project**

## **Reddie Drive Streetscape Project**

- Reddie Drive **between Georgia Avenue and N. Veirs Mill Road**
- Median, Curb Extensions, Pedestrian Crossings, Trees/Landscaping, Lighting Improvements
- PEPCO Utility Review (completed March 2012)
- Currently in final design
- Planned Construction – Summer 2012



**Piney Branch Road HIB Project (Crosswalk, Median, & Flashers)**

## **Piney Branch Road HIB**

- Location 1: **between University Blvd. and Carroll Ave.**
- Location 2: **between Carroll Ave. and New Hampshire Ave.**
- Flashing Beacons, Islands, Marked Pedestrian Crossings
- Final Design under Review
- Planned Construction – Fall 2012



# High Incidence Areas: Project Updates (cont')



**Randolph Road Median Treatment (West)**

## **Randolph Road Median (West)**

- Randolph Road from Veirs Mill Rd. to Selfridge Rd.
- 4-ft fencing with brick pavers
- Length = 300 feet
- Addresses mid-block jaywalking
- Completed December 2011

## **Randolph Road Median (East)**

- Randolph Road from Veirs Mill Rd. to Colie Dr.
- 4-ft fencing with tree plantings
- Length = 650 feet
- Addresses mid-block jaywalking
- Completed February 2012



**Randolph Road Median Treatment (East)**



# High Incidence Areas: Project Updates (cont')



## Colesville Road Short Term Improvements

- Reported structural deficiencies to SHA – repaired January 2012
- Reported foliage issues to Division of Highway Services – repaired February 2012
- Other minor issues addressed prior to completion of PRSA report

## Colesville Road Sidewalk Improvements - Structural



## Colesville Road Sidewalk Improvements - Foliage



## Colesville Road Improvements – Foliage





# High Incidence Areas: Piney Branch Road

## Background

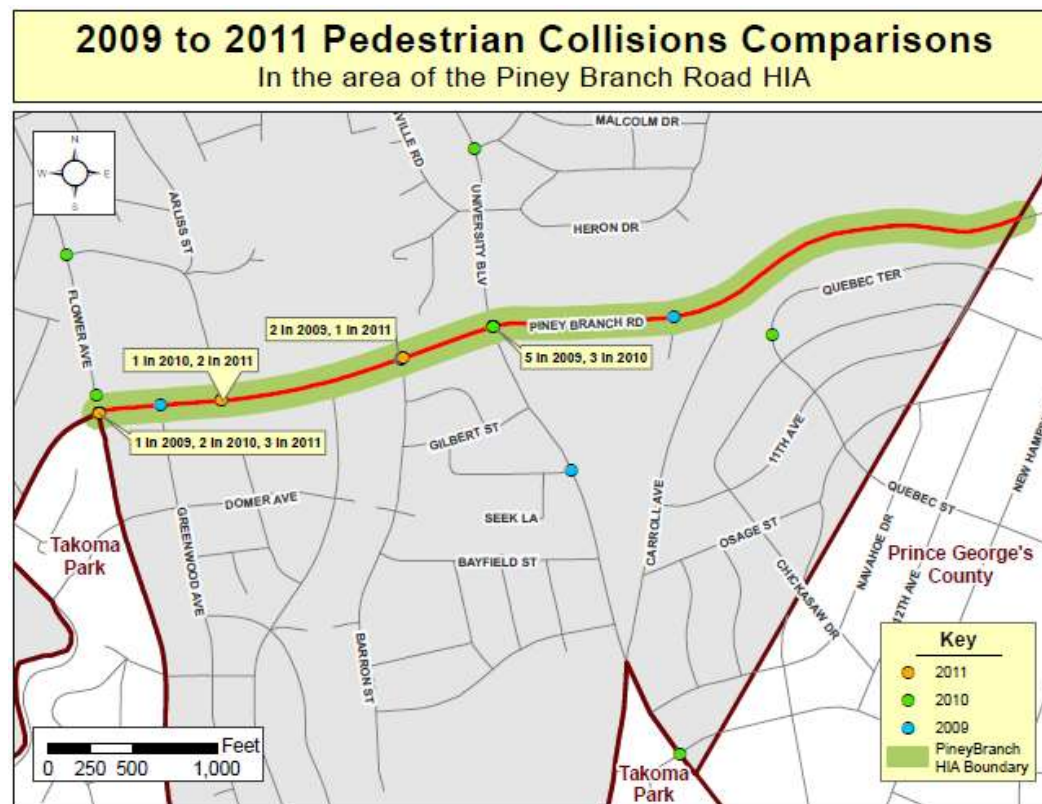
- 1<sup>st</sup> HIA: Piney Branch Road from Flower Avenue to the PGC/MC line
- PRSA conducted in Oct. 2008

## Observations

- Many mid-block crossings
- Pedestrian at fault in most crashes
- Limited roadway lighting
- Narrow sidewalks

## Updates since August 2011

- Curb Marker Pilot Study
- Targeted Enforcement (Dec 2011)
- Outreach Campaign/Press Event (2011)
- Two mid-block pedestrian crossings with flashers (Final Design Phase)
- MDSA resurfacing project (FY12)



| 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|------|------|------|------|------|------|-------|
| 10   | 8    | 7    | 8    | 3    | 5    | 41    |



# High Incidence Areas: Wisconsin Avenue

## Background

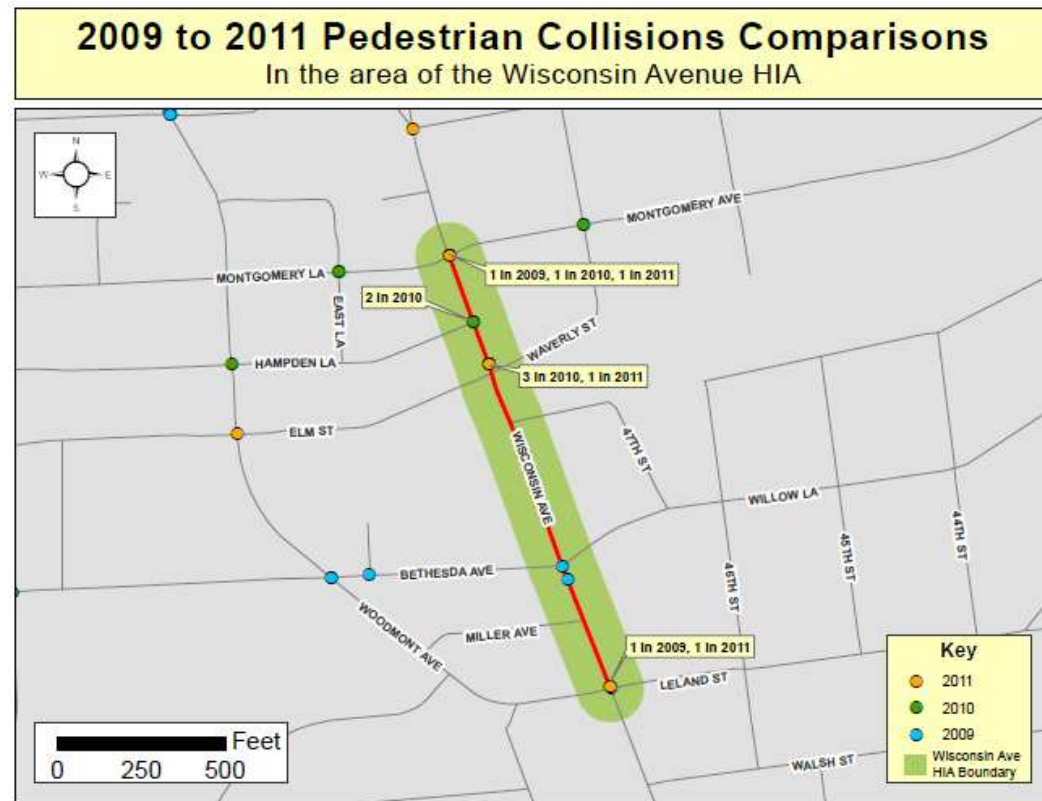
- Wisconsin Ave from Montgomery Ave to Leland Ave in Bethesda CBD
- PRSA conducted in Dec 2008

## Observations

- Drivers at fault in most crashes
- Crashes mostly at intersections
- Most crashes involved turning vehicles
- High concentration at Montgomery Ave

## Updates since August 2011

- Targeted Enforcement (Spring 2012)
- Planned MDSHA resurfacing project (FY14)
- Planned Traffic Signal Upgrades (MDSHA)



| 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|------|------|------|------|------|------|-------|
| 6    | 10   | 3    | 4    | 3    | 3    | 29    |



# High Incidence Areas: Georgia Avenue

## Background

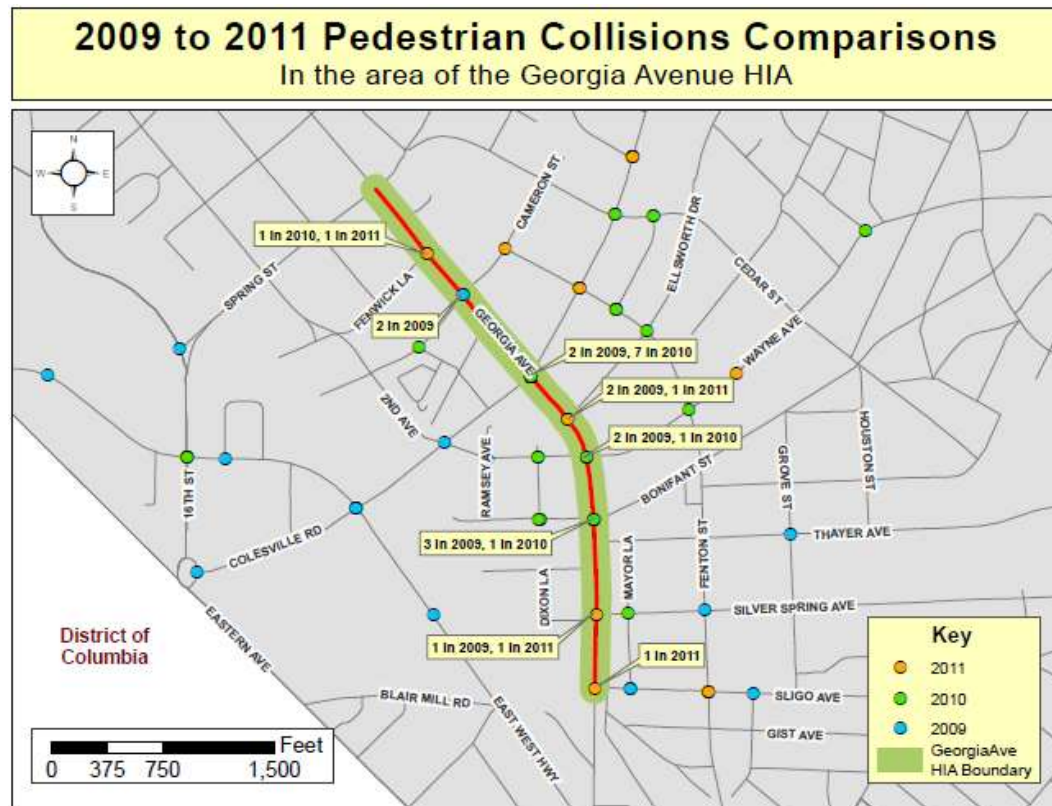
- Georgia Avenue **from to Spring Street to Sligo Avenue** in Silver Spring CBD
- PRSA conducted in March 2009

## Observations

- Primary conflicts are between crossing pedestrians and turning vehicles
- Both drivers and pedestrians fail to obey traffic rules

## Updates since August 2011

- Fenton Village Pedestrian Linkages Project with 21 Audit-Related Improvements (Spring 2012)
- US 29 Traffic Signal Improvement Project (Underway)
- Planned MDSA resurfacing project (FY13)
- Targeted Enforcement (Spring 2012)



| 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|------|------|------|------|------|------|-------|
| 7    | 5    | 7    | 10   | 4    | 4    | 36    |





# High Incidence Areas: Rockville Pike

## Background

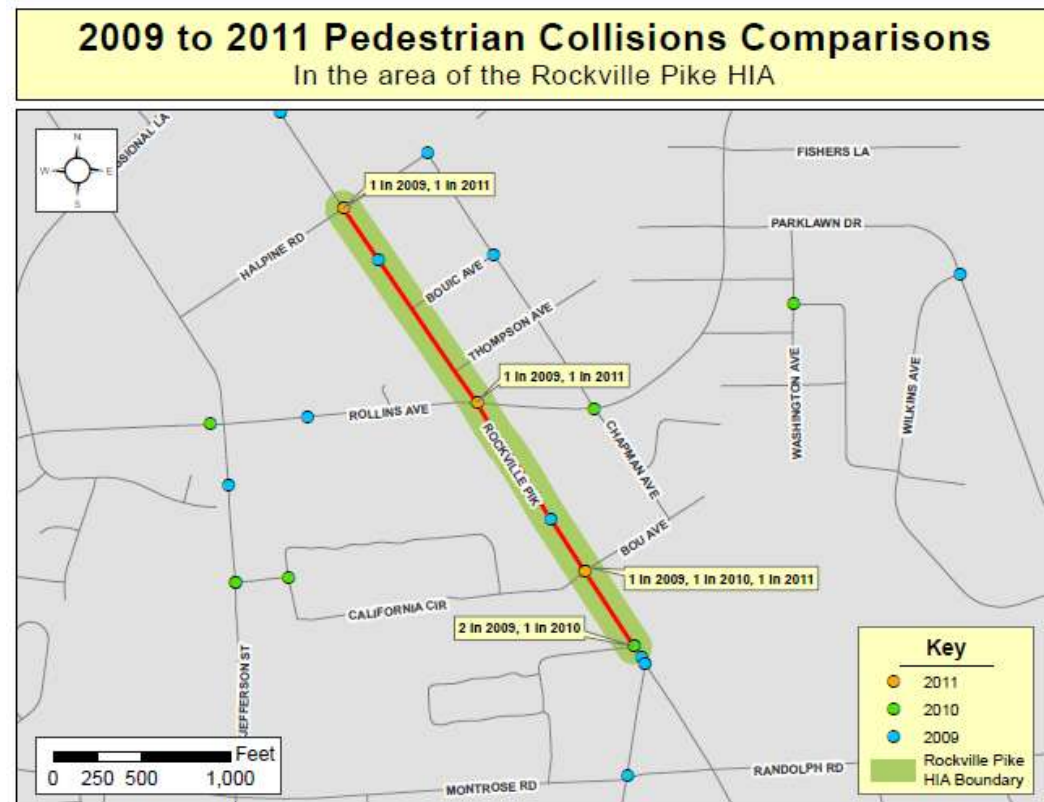
- Rockville Pike from to Halpine Road to Hubbard Drive
- PRSA conducted in June 2009
- High incidents of collisions with seniors and bicyclists

## Observations

- Narrow sidewalks
- Multiple access points
- Long distance between controlled crossings

## Updates since August 2011

- SHA Design Request submitted for traffic signal upgrades
- Targeted Enforcement (Spring 2012)



| 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|------|------|------|------|------|------|-------|
| 4    | 3    | 9    | 8    | 2    | 3    | 29    |



# High Incidence Areas: Four Corners

## Background

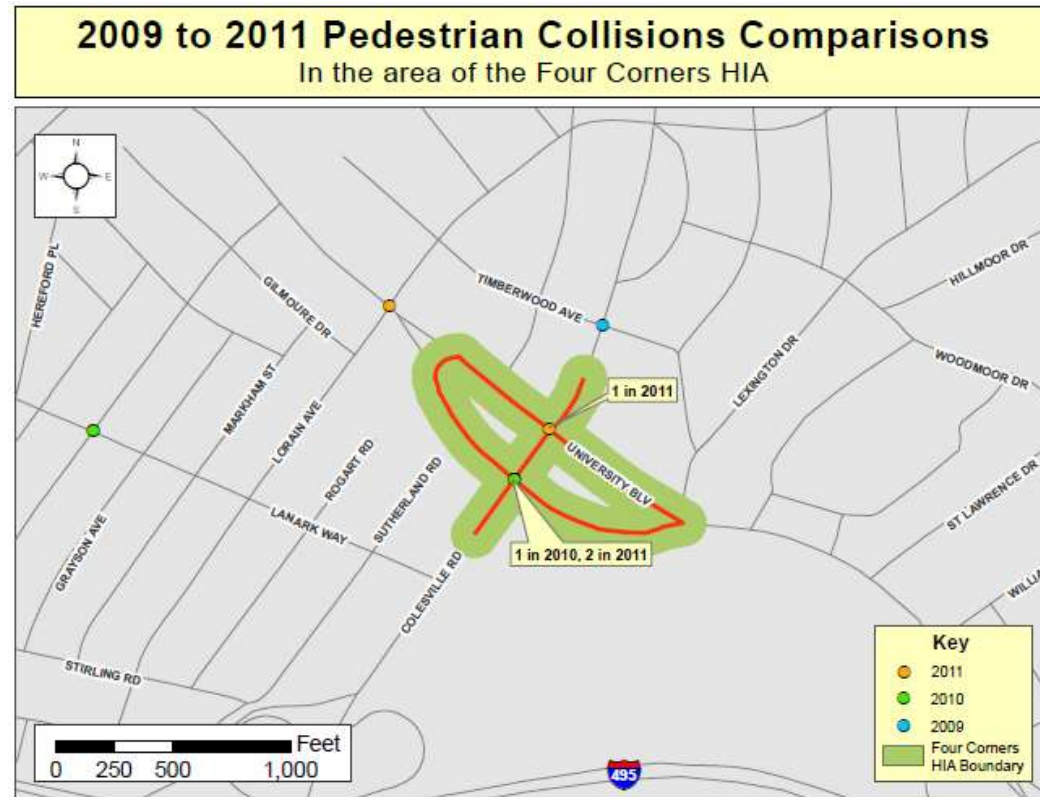
- Intersection of **Colesville Road and University Boulevard**
- PRSA conducted in Jan 2010
- Montgomery Blair HS

## Observations

- Large student population
- Many pedestrians cross mid-block
- Numerous commercial access points
- Heavy bus transit usage

## Updates since August 2011

- Montgomery Blair HS Education & Outreach Event (Spring & Fall 2012)
- Targeted Enforcement (Spring 2012)
- MDSHA resurfacing project completion



| 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|------|------|------|------|------|------|-------|
| 4    | 7    | 5    | 0    | 1    | 3    | 20    |



# High Incidence Areas: Reddie Drive

## Background

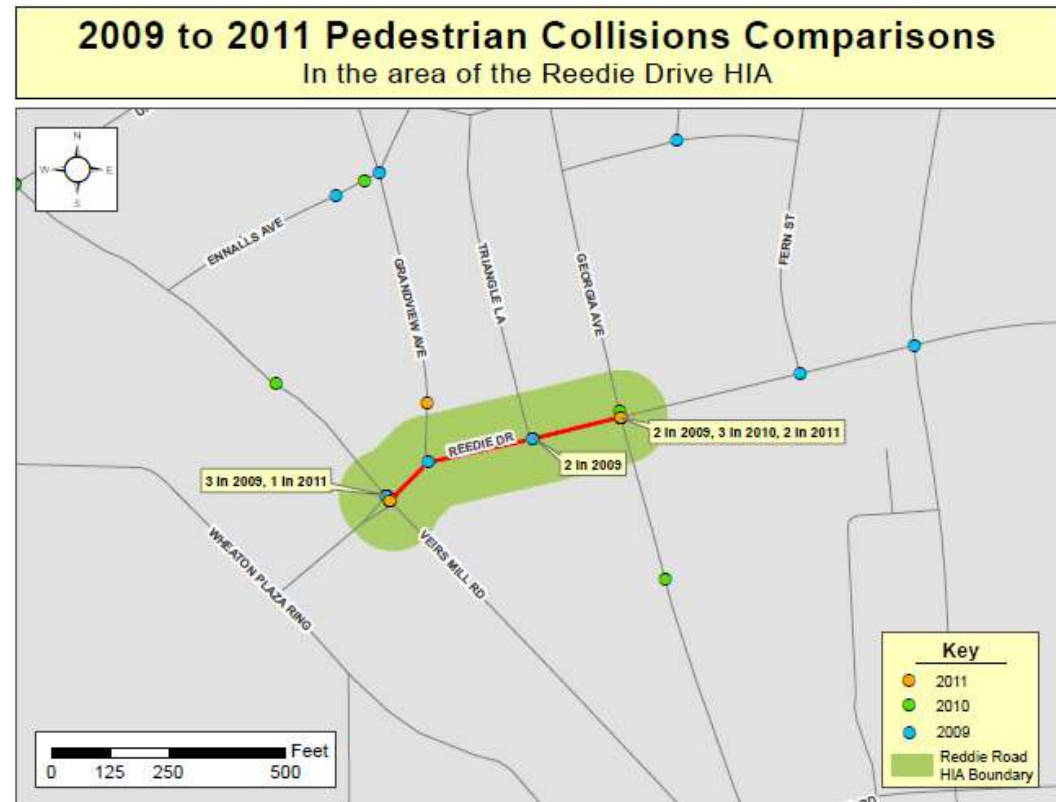
- Reddie Drive from Georgia Avenue to Veirs Mill Road in Wheaton CBD
- PRSA conducted in April 2010
- 1st County roadway PRSA

## Observations

- Mid-block crossing encouraged by adjacent site layouts
- Numerous pedestrian/vehicle conflicts
- Many pedestrians cross at non-designated locations

## Updates since August 2011

- Streetscape Project (Final Design Phase)



| 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|------|------|------|------|------|------|-------|
| 0    | 3    | 3    | 7    | 2    | 1    | 16    |



# High Incidence Areas: Randolph Road

## Background

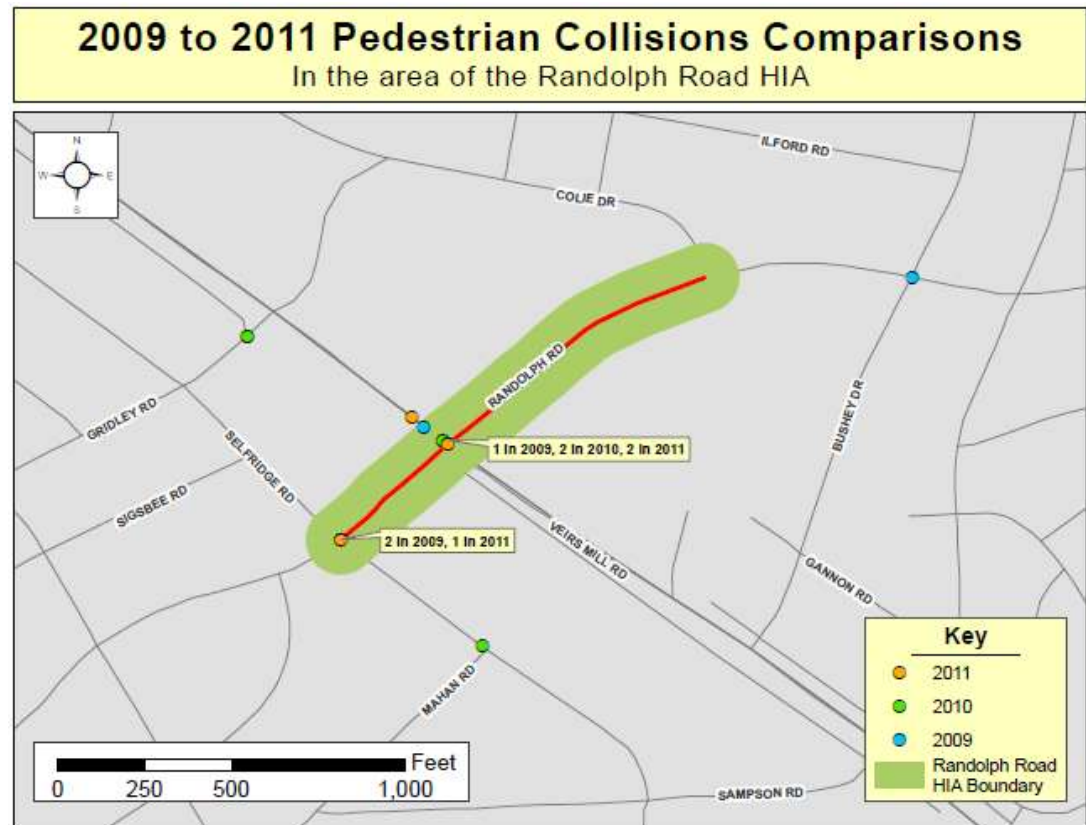
- Randolph Road from Colie Drive to Selfridge Road
- PRSA conducted in Sept 2010
- 2nd County roadway PRSA

## Observations

- Heavy pedestrian/bicycle demand and heavy transit usage
- Numerous pedestrian/vehicle conflicts
- Both drivers and pedestrians fail to obey traffic rules

## Updates since August 2011

- Additional sidewalk improvements (May 2012)
- Randolph Road Pedestrian Barriers
- Curb Marker Pilot Study (MDSHA approval pending)
- Targeted Enforcement (Spring 2012)
- Targeted Outreach (Spring 2012)



| 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|------|------|------|------|------|------|-------|
| 2    | 1    | 4    | 4    | 1    | 2    | 14    |



# High Incidence Areas: Connecticut Ave

## Background

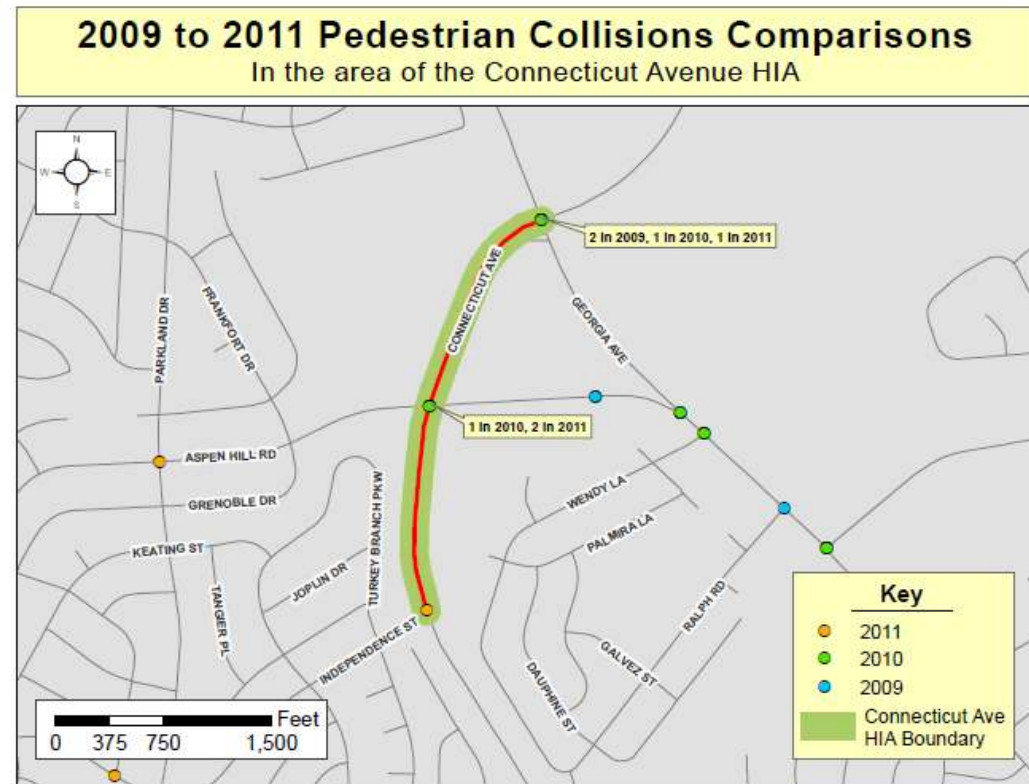
- Connecticut Ave from Georgia Avenue to Independence Street
- PRSA conducted in May 2011
- Conducted in anticipation of MDSA resurfacing project

## Observations

- Pedestrian/vehicle conflicts coupled with high speeds
- Jaywalking from commercial developments
- Long block distances
- Limited ADA accessibility

## Updates since August 2011

- Lighting repairs
- Planned MDSA resurfacing project (FY12)
- MDSA traffic signal improvements (Aspen Hill Road)
- Design Request submitted to SHA for traffic signal upgrades (Independence St.)



| 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|------|------|------|------|------|------|-------|
| 4    | 5    | 6    | 2    | 2    | 3    | 22    |





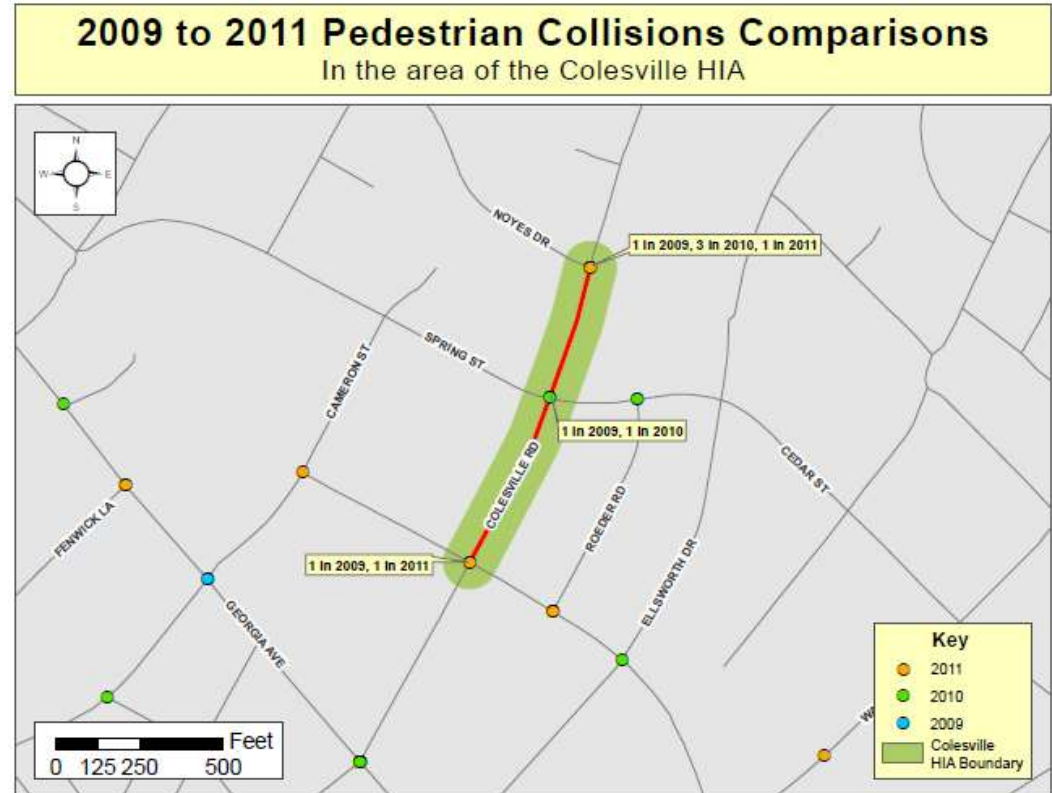
# High Incidence Areas: Colesville Road

## Background

- Colesville Road from Fenton Street to N. Noyes Drive
- PRSA conducted in November 2011
- Second PRSA in Silver Spring CBD

## Observations

- Pedestrian/vehicle conflicts coupled with high speeds
- Jaywalking from commercial developments
- Heavy pedestrian demand
- Considerable peak period congestion



| 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|------|------|------|------|------|------|-------|
| 4    | 5    | 6    | 2    | 2    | 3    | 22    |



## High Incidence Areas: Expenditures & Obligated Funds

|                            | FY11 Budget | FY11 Actual | FY12 Budget | FY12 Actual* |
|----------------------------|-------------|-------------|-------------|--------------|
| Engineering & Construction | \$875,000   | \$340,000   | \$1,050,000 | \$ 607,000   |
| Education                  | \$100,000   | \$85,000    | \$100,000   | \$160,000**  |
| Enforcement                | \$125,000   | \$107,000   | \$125,000   | \$50,000     |
| Performance Monitoring     | -           | -           | \$50,000    | \$24,000     |
| Total                      | \$1,100,000 | \$532,000   | \$1,325,000 | \$841,000    |

*\* Includes the first three quarters of FY 12*

*\*\*Expenditures includes carry-over from previous fiscal years*

Fiscal year spending in the HIAs is increasing with the increasing number of completed audits. Additionally, there are several major long-term projects scheduled to begin in the last quarter of FY12 and early in FY13, for which previous year funds have been encumbered.



# High Incidence Areas Highlights and Recent Developments: Engineering

- Prioritization of pedestrian safety projects on State roadways via cost-sharing initiatives.
- MCDOT participation in State road safety audits.
- MDSHA participation in County pedestrian road safety audits
- Design underway for mid-term and long-term projects
- Six (6) HIA-related projects (approx. \$235K) constructed in the first three quarters of FY12.
- Large-scale projects, including Reddie Drive Streetscape and Piney Branch HIBs planned for summer/fall 2012 (est. \$350K).



**MCDOT continues to work with MDSHA to build a comprehensive strategy for pedestrian safety projects throughout Montgomery County.**





# High Incidence Areas: Education

## Education & Outreach Strategies

### Education Plan Development

- Montgomery Blair HS (Four Corners HIA)
- Grouping HIAs by Demographics & Crashes

### Group One:

- Randolph Rd.
- Reddie Dr.
- Connecticut Ave.
- Four Corners
- Piney Branch Rd.

### Group Two:

- Wisconsin Ave.
- Rockville Pike
- Georgia Ave.
- Colesville Rd.
- Old Georgetown Rd.



# High Incidence Areas: Education

## Education Strategies

### Pedestrian Surveys

- Piney Branch Road (2009)
- Four Corners (2011)
- Wisconsin Avenue (2011)

### Piney Branch HIA Campaign

- Bilingual Safety Promotion Teams
- Curb Markings (innovative strategy)
- Fliers/bus shelter posters
- Coordinated Enforcement Actions

### Four Corners HIA Campaign

- Blair HS-Student Workgroup
- “Best Eyes” contest: See Them See You
- Text messaging contest

### Randolph Road HIA Campaign

- Implementation Spring 2012
- Strategies:
  - Replicate Piney Branch Campaign
  - May Public Meeting
  - Taste of Wheaton-Outreach



# High Incidence Areas: Piney Branch Case Study

## Enforcement Efforts

- **Overall effort**
  - 295 warnings
  - 488 citations
    - 461 pedestrian 27 vehicle
- **Detailed data**
  - Available for 237 warnings and 357 citations (pedestrian):
    - Warnings:
      - 110 (46%) for crossing outside of the crosswalk
      - 127 (54%) for crossing during “Do Not Walk” signal phase
    - Citations:
      - 215 (60%) for crossing outside of the crosswalk
      - 142 (40%) for crossing during “Do Not Walk” signal phase
- **Lessons Learned:**
  - Good community support
  - Issue more citations, less warnings
  - Witnessed citizens educating each other
  - Need more translators (not just Spanish)
  - Need quick response to signals out of order
  - Should hand out safety tips brochure with tickets and warnings
  - MCPD observed fewer violations per hour in follow-up events



Data Source: Foursquare ITP

# High Incidence Areas: Piney Branch Case Study

## Preliminary Education Impact Findings

### Performance Monitoring Methodology

- Data on midblock crossings and signal adherence
- Baseline data collected 10/25 and 11/1
- Post-education data collected 11/30 and 12/5
- Plan to collect 3- and 6-month post-implementation data
- AM Peak (7:00am–9:30am) and PM Peak (2:30pm–6:30pm)



| Pedestrian Behaviors                  | Percent Baseline | Percent Post-Education | % Change | Baseline Count | Post-Education Count |
|---------------------------------------|------------------|------------------------|----------|----------------|----------------------|
| Mid-block Crossing                    | 9.2%             | 6.7%                   | -27.2%   | 2,444          | 2,321                |
| Crossing Outside of Crosswalk         | 8.5%             | 4.2%                   | -50.6%   | 322            | 307                  |
| Crossing During “Walk” Phase          | 59.9%            | 60.7%                  | 1.3%     | 1,772          | 1,715                |
| Crossing during “flashing hand” Phase | 4.6%             | 8.0%                   | 73.9%    |                |                      |
| Crossing During “Do Not Walk” Phase   | 34.9%            | 31.3%                  | -10.3%   |                |                      |



Data Source: Foursquare ITP

# Safe Routes to Schools Prioritization

Started in 2005, over 50 schools have had comprehensive assessments conducted and improvements implemented



- **ENGINEERING: Reprioritized to weight pedestrian collisions**
  - Weighted scores with pedestrian collisions - used to prioritize schools
  - Factored into engineering evaluation criteria for overall score
  - Safe Routes to School (SRTS) list reprioritized using crash data weighting factor
  - SRTS Grant Applications now reflect reprioritization
- **EDUCATION: Increased at schools with high ped collisions**
  - SRTS Coordinator working with 109 Elementary Schools and 31 Middle Schools
  - SRTS Coordinator placing highest priority on schools with pedestrian collisions within 1/4 mile
- **ENFORCEMENT: Increase at schools with high ped collisions**
  - Enforcement actions targeted at schools with higher number of pedestrian collisions

Focused resources that improve pedestrian safety and mobility have resulted in the evaluation of over 100 specific safety concerns and reducing pedestrian collisions





## Safe Routes to School: Collision Update

| School Name           | 3 Years Before Treatment |                     | After treatment              |                     |
|-----------------------|--------------------------|---------------------|------------------------------|---------------------|
|                       | Time period              | # of ped collisions | Time period (up to Dec 2011) | # of ped collisions |
| Stone Mill ES         | 3/2006 – 3/2009          | 2                   | 2 yrs - 9 mos.               | 0                   |
| Olney ES              | 2/2006 – 2/2009          | 1                   | 2 yrs - 10 mos.              | 5                   |
| Georgian Forest ES    | 3/2006 – 3/2009          | 6                   | 2 yrs - 9 mos.               | 1                   |
| Kingsview MS          | 3/2006 – 3/2009          | 12                  | 2 yrs - 9 mos.               | 1                   |
| Thurgood Marshall ES  | 3/2006 – 3/2009          | 1                   | 2 yrs - 9 mos.               | 0                   |
| Martin Luther King MS | 7/2006 – 7/2009          | 11                  | 2 yrs – 5 mos.               | 1                   |
| Flower Hill ES        | 6/2006 – 6/2009          | 7                   | 2 yrs - 6 mos.               | 0                   |
| Greenwood ES          | 4/2006 – 4/2009          | 2                   | 2 yrs - 8 mos.               | 1                   |
| Rosa Parks MS         | 4/2006 – 4/2009          | 2                   | 2 yrs - 8 mos.               | 1                   |
| Cannon Road ES        | 6/2006 – 6/2009          | 3                   | 2 yrs - 6 mos.               | 1                   |
| Clearspring ES        | 4/2006 – 4/2009          | 1                   | 2 yrs - 8 mos.               | 1                   |
| <b>Total</b>          | <b>396 Months</b>        | <b>48</b>           | <b>351 Months</b>            | <b>12</b>           |

Although the post treatment time period has not reached the full three years, initial data demonstrates the collision rate has declined from 1.45 to .40 incidents per year.



# Safe Routes to School: Engineering Output Metrics

## School Zone Pedestrian Treatments Activities

|                           | FY08      | FY09      | FY10      | FY11      | FY12*     | Total      |
|---------------------------|-----------|-----------|-----------|-----------|-----------|------------|
| Targeted Assessments      | 25        | 21        | 16        | 24        | 10        | 96         |
| Comprehensive Assessments | 10        | 13        | 11        | 23        | 18        | 75         |
| <b>Total Assessments</b>  | <b>35</b> | <b>34</b> | <b>27</b> | <b>47</b> | <b>28</b> | <b>171</b> |
| Improvements Implemented  | 35        | 34        | 19        | 30        | 11        | 129        |

## School Zone Pedestrian Treatments

### Budget and Expenditures

|          | FY09     | FY10         | FY11         | FY12       |
|----------|----------|--------------|--------------|------------|
| Budgeted | \$80,000 | \$330,000    | \$156,240    | \$156,240* |
| Expended | \$80,000 | \$159,000 ** | \$125,361 ** | \$ 28,210* |

\* Through 3rd quarter of FY12

\*\* Reduced due to savings plan and spending freeze



# Safe Routes to School: Education and Enforcement

## Output Metrics

| Education & Enforcement Activities                         |      |        |       |        |
|--|------|--------|-------|--------|
| Activities   | FY09 | FY10   | FY11  | FY12*  |
| Outreach - Meetings held (School Administrator and Parent) | 28   | 19     | 26    | 20     |
| Schools Observed (Arrival and Dismissal)                   | 34   | 7      | 24    | 5      |
| Incentives Distributed                                     | 220  | 12,880 | 2,252 | 11,200 |
| Citations Given  | N/A  | 163    | 312   | 0      |

| Education & Enforcement Budget and Expenditures |          |          |          |          |          |          |          |          |
|---|----------|----------|----------|----------|----------|----------|----------|----------|
| Activities                                      | FY09     |          | FY10     |          | FY11     |          | FY12*    |          |
|   | Budget   | Actual   | Budget   | Actual   | Budget   | Actual   | Budget   | Actual   |
| Education                                       | \$56,852 | \$78,955 | \$40,376 | \$28,948 | \$33,952 | \$46,658 | \$53,090 | \$27,550 |
| Enforcement                                     | \$10,900 | \$4,506  | \$12,800 | \$2,112  | \$12,200 | \$12,278 | \$25,200 | \$0      |

\* Through 3<sup>rd</sup> quarter of FY12





# Safe Routes to School: Bicycle and Pedestrian Education

## Bicycle Rodeo

- Goal - to empower young cyclists with a set of skills for on-road riding and includes helmet fitting and bike safety inspection.



## Crosswalk Simulation

- Simulated real world experience of crossing a street.
- Kids practice approaching the street, looking left, right, and left again and crossing in the middle of the crosswalk.



# Traffic Calming: Collisions Update

| Project Name      | Completion Date | Speeds (MPH) |             |            | Collisions 3 Years Before Treatment | Time period Since Treatment | Collisions Since Treatment |
|-------------------|-----------------|--------------|-------------|------------|-------------------------------------|-----------------------------|----------------------------|
|                   |                 | Posted       | Avg. Before | Avg. After |                                     |                             |                            |
| Connecticut Ave   | July-07         | 40           | 48          | 40         | 10                                  | 3 yrs.                      | 4                          |
| Aspen Hill Dr     | May-08          | 30           | 35          | 34         | 14                                  | 3 yrs.                      | 3                          |
| Arcola Ave        | Aug-08          | 30           | 42          | 32         | 3                                   | 3 yrs.                      | 3                          |
| Fairland Rd       | July-09         | 40           | 53          | 42         | 2                                   | 2 yrs. 5 mos.               | 0                          |
| Calverton Blvd    | July-09         | 30           | 41          | 35         | 1                                   | 2 yrs. 5 mos.               | 1                          |
| Lockwood Dr       | July-09         | 30           | 40          | 30         | 0                                   | 2 yrs. 5 mos.               | 1                          |
| Sligo Ave         | Sept-09         | 30           | 34          | 31         | 1                                   | 2 yrs. 3 mos.               | 3                          |
| Carroll Ave       | Nov-09          | 25           | 33          | 27         | 2                                   | 2 yrs. 1 mo.                | 1                          |
| Spartan Rd        | Nov-09          | 30           | 40          | 33         | 0                                   | 2 yrs. 1 mo.                | 0                          |
| Dale Dr           | Aug-10          | 30           | 39          | 34         | 0                                   | 1 yr. 4 mos.                | 0                          |
| Prince Phillip Dr | Jun-11          | 30           | 36          | 31         | 0                                   | 6 mos.                      | 0                          |

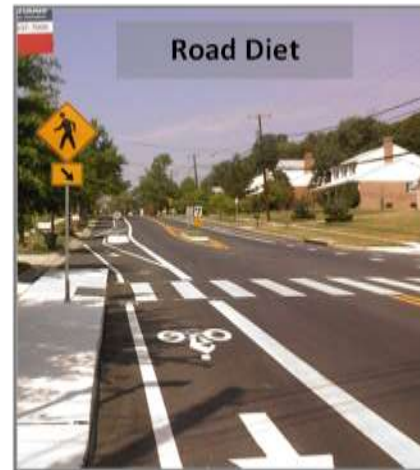
Speed decline  $\geq 5$ mph

Updated in 2011



# Traffic Calming: Typical Treatments

- Pedestrian Refuge Islands
- Bump-Outs / Curb Extensions
- Chicanes / Chokers
- Enhance signing and marking
- Speed Humps
- Edgelines
- Road Diet





# Traffic Calming: Recently Completed Projects



Arcola Boulevard – Traffic Calming and Rain Gardens



Jones Bridge Road Traffic Calming  
(North Chevy Chase ES)



Crystal Rock Drive Traffic Calming  
(Seneca Valley HS)



Wisteria Drive Traffic Calming  
(S. Christa McAuliffe ES & Roberto W. Clemente MS)



# Other Programmatic Highlights: Annual Sidewalk, ADA and Bus Stop Programs

## –Project Description

- Construction of new sidewalks
- Reconstruction of existing sidewalks and ramps to meet ADA requirements
- Construction of Bus Stops.
- Provides pedestrian connectivity and safe facilities outside of the roadway.

–Total Annual Budget: \$4.85 Million

## –Total FY12\* Accomplishments

- **3.2 miles** of new sidewalk
- **518 ramps** reconstructed to meet ADA specifications
- **1.5 miles** of new bus stop-related sidewalks
- **273** concrete bus stop pads (10,215 square feet)

*\* Through 3<sup>rd</sup> quarter of FY12*

### Rippling Brook Dr across Matthew Henson Trail

350 linear feet of new sidewalk with bike grooved stairs



### Rainbow Dr

1720 linear feet of new sidewalk



## Other Programmatic Highlights: Pedestrian Signal Timing



### Pedestrian Signal Timing Developed/Implemented

|                              | FY12* | Total<br>(FY09 – FY12*) |
|------------------------------|-------|-------------------------|
| Ped Timing Upgrades Funded   | 75    | 317                     |
| New Ped Timing Implemented   | 41    | 285                     |
| Total County Traffic Signals | 750   |                         |
| Percent Implemented          | 38%   |                         |

- Total Program Cost = \$1.125M
- FY09 - FY12 Allocation = \$474
- Implemented by coordinated groups of traffic signals
  - All timing parameters for all times of day
  - Requires jurisdictional coordination

*From 2009 through 2012, pedestrian signal timing changes were found to not be required at three (3) intersections.*

*\* Through 3<sup>rd</sup> quarter of FY12*



# Wrap-Up

- Follow-up items

